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February 1963

STUDIES ON THE ECONOMIC ASPECTS
OF FRUIT AND VEGETABLE BARGAINING

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APR 11 1963

C & R-PREP.

Division of Marketing and Utilization Sciences
U. S. Federal Extension Service,
U. S. Department of Agriculture
Washington 25, D. C.

Preface

Although there is currently a great deal of interest in cooperative bargaining for fruits and vegetables, relatively little attention has been given to the economic relationships involved. As a result, there has been some misunderstanding of the possibilities and limitations of bargaining.

It is the purpose of this report to provide a body of economic knowledge which will provide a more enlightened platform from which to assess bargaining. This is done by bringing together, in summary form, four recent economic studies on various phases of bargaining. For purposes of brevity and format, the papers have been slightly edited; they have been reviewed by their authors and are presented here with their permission.

While the report was designed primarily for state extension workers, the papers - with the possible exception of the last - may be of more general interest. Other publications of related interest are listed at the end of the bulletin. Several of the authors are continuing their study of bargaining and further reports may be expected in the near future.

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Bargaining Cooperatives - Their Possibilities and Limitations
for Improving the Economic Position of the Farmer*

by G. Alvin Carpenter
University of California

In recent months farmers in many areas of the country have become increasingly interested in ways and means of improving their bargaining position. Many of them are asking for more information as to how cooperative bargaining associations can be organized and how they can operate most effectively. The growth in cooperative bargaining is part of the current movement toward increased integration in agriculture as well as in other parts of the economy. Although many growers prefer to sell their own crop and deal directly with canners or other outlets, other growers view cooperative bargaining as a means of improving their price and income position in the changing market and distribution system they face.

I. What is a Bargaining Cooperative?

A grower cooperative bargaining association is a voluntary organization established under the appropriate state statutes and is subject to the state and federal legislation governing agricultural cooperation. This type of association generally has an open-door membership policy because it is interested in obtaining bargaining control over as large a proportion of the industry or crop as possible. The members, through contractual arrangements, grant to the association the full authority to bargain for price and other terms of contract and to sell their crop for them.

In most respects a grower cooperative bargaining association is very little different from the usual agricultural marketing cooperatives, but there are some distinctive characteristics. A collective bargaining association usually does not seek to handle physically the products of its members. The function of the association is a bargaining one, without involving the added responsibility of assembling, processing or distributing the product. Bargaining associations also usually sell their tonnage to processors during a very short period of time; and for given grades, a single uniform price usually prevails for the entire quantity sold.

The major objective of the bargaining cooperative is to obtain for its members the highest returns consistent with current and prospective economic conditions and the long-term welfare of the growers. Collective bargaining is one method of giving farmers a voice in establishing the

*This is a slightly condensed version of a paper prepared for a seminar on The Economics of Agricultural Processing and Distributing Industries, University of California, July 23,-August 2, 1961. Underlining and numbering have been added at several points.

1/Sidney S. Hoos, "Cooperative Bargaining Associations," reprint from California Agriculture, 1960, p. 5.

price and terms of sale for their product. Collective bargaining tends not to stifle competition but to improve it between producer groups and processor groups. It may serve to protect producers against monopoly by the processor on the one hand and on the other hand prevent disastrous competition among unorganized sellers themselves. By pooling their volume, farmers may provide themselves with many services essential to efficient production and distribution, which are otherwise not available to the individual farmer. As a group, they can make economical use of specialized personnel and skills which they, as individuals, probably could not acquire or only at a high cost.

For a bargaining cooperative to operate effectively, it must be realistic, be well fortified with the necessary economic information and have bargaining know-how. Its management must have the confidence of the membership and of the processors. It must be able to attract and hold a sufficient number of growers and control an adequate proportion of the industry tonnage to be effective. These requirements are met in different degrees by various bargaining associations. Some have obtained considerable success in the past, while others are still struggling. It is no simple matter to determine the price which fits in with the association's goal and that of the processors as well. The growers must reach a unified position among themselves, and then they have the difficult problem of reaching agreement with the processor. Processors, of course, desire to have a price they judge to be consistent with their view of economic conditions and their own interests. Their view may not necessarily coincide with the views of growers. These are some of the problems that must be negotiated through bargaining techniques.

In certain segments of agriculture where monopsonistic elements are the rule rather than the exception, bargaining associations have a definite role to play in improving the status of the farmer. Where effective control over volume can be secured and when effective bargaining techniques are followed, the association can have considerable influence in determining price and other contract provisions which will improve the position of the member. Bargaining associations are not the "cure-all" for all the marketing problems of the farmer; but under certain conditions and proper leadership, they can be a very effective tool to improve his economic position.

II. Factors for Success in Bargaining Associations^{2/}

Cooperative efforts in bargaining must adhere to fundamental principles and practices if they are to be effective. Many of the same principles apply here as in other fields of cooperation. Some of the most important are:

1. There must be a definite economic need for the association.
A bargaining association can be most effective where there is a large number of small producers competing with each other for the sale of their product to a few well informed and

^{2/}G. Alvin Carpenter, "Bargaining Associations in the Processed Vegetable Industry," Proceedings, American Institute of Cooperation, 1952.

organized processors. It is also most effective where the product is produced within a limited area and when the product is one having inelastic demand. Such a situation offers opportunities for growers to increase their bargaining power through a well organized association.

2. It is axiomatic that the association must have sound, capable leadership and management and so maintain it.
3. The management should consist of bona fide growers who adequately represent the industry as a whole. When processors know that the association truly represents the growers and has their support and is not run by a clique of "hired hands" who may want to make a big showing, they will respect its policies and program.
4. Sufficient educational work must be done in advance to adequately inform prospective members concerning the objectives of the association and its operations. An adequate membership education program must be maintained continually to keep members informed and responsive to the needs of the association.
5. To be effective, the association must have a high percentage (80 to 90%) of all production in the area signed up. This is necessary to gain and maintain sufficient bargaining strength.
6. The management should not make unreasonable demands in its negotiations with processors. Demands should be based on facts that can be substantiated. Too many associations have priced themselves out of the market by demanding more than their product justified under the conditions of the market.
7. The legal structure must be sound. It must meet the requirements of state and federal statutes and fit the needs of the association.
8. The association must be adequately financed so that it can conduct its operations on a businesslike basis.
9. The association must be willing to study its problems and be ready to accept new ideas and methods. It must broaden its field of interest and keep abreast of new developments in the fields of production as well as marketing.
10. It must have a cooperative attitude and try to negotiate contracts in a spirit of "give and take." Working closely with processors in an honest effort to solve mutual problems helps create understanding and successful operation.
11. The association must constantly strive to improve its sources of information and its bargaining skills. It must work fairly and constructively, not only with the processors, but with private and governmental agencies and the public in general.

I do not believe that any of the collective bargaining associations now in operation have anywhere near reached their potentialities. Many of their weaknesses, which become evident after reviewing the factors mentioned above, are difficult to overcome. Some of them are in the field of psychology and human relations; others are in the field of economics.

III. Tools to Improve Bargaining Strength

As we review the attempts of some bargaining associations, often they have started with great enthusiasm and promise, only to end in discouragement and failure--principally because they attempted too much without having enough factors under control.

Among the tools important to successful bargaining are:

1. Positive control of enough tonnage to carry bargaining weight.
2. An adequate supply of the right type of marketing and economic information.
3. A manager and a board of directors with enough freedom of decision and the courage and know-how to bargain effectively.

1. Control of Tonnage

What do we mean by positive control of tonnage? This may be accomplished in many ways, but it basically requires that there be an airtight contract between the grower and his association. The contract may be an enforceable one for the sale of product in advance of harvest, or it may simply specify that the association is the sole bargaining agent for its members. With control of enough tonnage to be effective, the association's second tool becomes proper awareness of all the problems that go into pricing.

2. Economic Information Needed

Unless a bargaining association has adequate marketing and economic information, it cannot hope to equal the bargaining strength of the buyer. The aim of any bargaining association should be to arrive at negotiation meetings with a stock of information equal to or superior to that owned by the processors across the table.

A most important requisite for efficient and sound handling of negotiations is economic information of a type which allows thorough analysis of current problems in the industry and in the market. The more complete and accurate such information, the closer the negotiations can be guided by intelligent decisions rather than by blind guesses. If each side has the facts and a sincere desire to bargain in good faith, it is much more likely that negotiations will move smoothly and that equitable results will be achieved.

Bargaining ability is attained through a knowledge of (1) market facts, (2) proficiency in evaluating them, and (3) skill in convincing

others to make transactions. It is gained through study and experience. It is an ability highly regarded in a competitive economy.

In general, to be effective in bargaining, each side needs to know:

- The economic conditions in the market at all times.
- What the results of existing prices and other conditions are likely to be.
- What forces have been important in bringing about existing conditions.
- How their organization may anticipate and modify the effect of these forces.

a. Many Types of Information Needed

More specifically, each side will need accurate and current information on:

1. Factors affecting the supply of the particular product--in other words, a thorough knowledge of what it has to sell; that is,

- The amount--tons, bushels, or units.
- The various grades and sizes.
- The varieties.
- The time available for marketing.
- Particular methods of marketing or marketing programs.
- Adequate information regarding substitutes or competing crops, not only in the particular state or region but over a wide area, both national and international.

Types of economic information cannot be limited to the farm level only. Management and directors must be familiar with f.o.b. wholesale and retail market information. Consideration must be given to the total pack produced the previous year, the movements, the current stocks, and carryover at both f.o.b. wholesale and retail levels and the price trends at those distribution levels, for both the original and the substitute products. Most crops are affected by national conditions, even though they may be sold to a limited number of processors in a given area. Therefore, all angles of the supply situation should be analyzed.

2. Factors affecting demand for the product, for example:

- What are the trends in general economic and business conditions?
- What is the trend in buying power of consumers?

-What are the trade preferences of buyers for specific varieties or types of the product?

3. A bargaining association should have thorough knowledge of its customers and their bargaining power and preferences. This may include:

- A list of buyers.
- The financial position of prospective buyers.
- Willingness of such buyers to do business with a cooperative.
- Alternative sources of supply available to such buyers.
- The trend in utilization of the commodity, such as per capita consumption and the amounts used fresh, canned, frozen, or in other forms.

4. To be successful in bargaining, it is important that management have more than economic information. It is also important to have estimates of the economic relationships between these important variables and to what extent these variables influence prices. This is not always easy to obtain and sometimes specialist help in the form of price analysis must be had. Such information would include:

- A detailed knowledge of supply-price relationships, including the nature of the demand for the product.
- The quantity needed and how much will be taken at different price levels for domestic and foreign uses.
- What volume is likely to move at different prices throughout different seasons of the year.
- At what levels growers are likely to increase plantings.
- What the effect of carryover will be.
- What the effect of substitutes will be and when they will start to take over the market from the original product.
- How far the processor-buyer can go and what his costs and alternatives are compared to those of the producer.

b. Need Year-Round Information

The need for up-to-date economic information in cooperative bargaining is year-round. Much too often the question of economic information is disregarded until a few weeks before harvest. Then the manager or some committee frantically gets on the telephone and tries to pick up gossip and rumors and size up the market. Such a method of operation is not only

inadequate--sometimes it is foolhardy. Although the actual sale of the crop may take place in a few days, that day must be prepared for throughout the year.

Often there is a danger of misinterpreting the economic information available. We're often smothered by too much literature or irrelevant information. Critical selection and analysis are necessary, and what is appropriate for one crop may differ from what is appropriate for another crop. The trick which every bargaining association must learn is to select from among the tremendous flow of oral and printed matter the most important information which bears upon the association's problems.

IV. What Should be the Price Objective?

Assuming there is good economic reason for an industry to stay in production in an area, here are some of the principles that should guide association in developing their price policy:

1. Price should be high enough to make it worthwhile for producers to stay in the market and continue to produce a high quality product.
2. It should not be so high as to bring about an undue increase in production for a period of years by those producers regularly supplying the market.
3. It should not be so high as to encourage new producers from the outside to enter the market and furnish it with products materially beyond its needs.
4. Price should not be so high that retail prices will be increased to a point where consumption is unduly discouraged and the commodity priced out of the market.
5. It should have reasonable steadiness from month to month, and from year to year, if possible. However, this may not necessarily give the greatest net return since advantage can often be obtained through seasonal price changes.
6. It should be about high enough to give the same income as alternative crops, to prevent violent shifts in production patterns.

These points, of course, emphasize the ideal price policy, but we must realize that these objectives are difficult to achieve.

* * *

In summing up, then, bargaining strength depends greatly upon knowledge of market and other facts, proficiency in evaluating them, and skill in convincing others to make transactions. It is gained through study and experience. It is highly rewarded in the competitive economy. Wise, well-informed leadership, coupled with positive control of adequate tonnage, is vitally important to the continued success of any bargaining effort.

* Factors to Consider in Determining Pricing
Policies of Cooperative Bargaining Associations *

by Vernon Schneider
University of Wisconsin

During the past decade, increasing interest has been expressed by producers of many agricultural commodities in the possibility of using cooperative bargaining associations as a means of improving their price and income position. This has been particularly true in the fruit and vegetable industries, although recently other commodity groups have attempted this approach to bargaining.

A clear-cut "yes" or "no" cannot be given as to the wisdom of using bargaining activity to bring about an improvement in the income position of producers of a particular commodity. The term "it depends on" characterizes the opportunities and limitations of bargaining activity in agriculture. It depends on whether or not the economic and non-economic forces are working "for" or "against" the producers; and, it depends on the wisdom and the judgment of the producers (and the officers of the association representing the producers) and their use of available economic, political and legal tools for improving their income position through organized group action.

The conclusions are divided into five parts: (1) reconsideration of criteria for judging a performance of group bargaining organizations; (2) an analysis of the factors affecting the performance of a group bargaining organization; (3) the effect of supply and demand elasticities on bargaining power; (4) the opportunities and limitations of group bargaining; and, (5) short-run and long-run pricing policies.

I. Reconsideration of Criteria

The four major indexes for judging the performance of a cooperative bargaining association are (1) price, (2) fringe benefits, (3) gross income, and (4) net income.

In agricultural bargaining cooperatives, considerable attention has been focused on price as an index of performance. Part of this analysis is a carryover from industrial bargaining where wage rates are the primary concern of labor unions. However, the situation is quite different in agricultural bargaining. Rather than selling a personal service in the form of labor, the agricultural bargaining organization deals in a commodity. While it is true that considerable labor may be involved in the production and harvesting of the commodity, other factors of production, such as land and capital, add significantly to the cost of production.

*This is a copy of the concluding chapter of Mr. Schneider's Ph. D. dissertation of the same title, Oregon State University, Department of Agricultural Economics, 1962, pp. 144-153. In the study, particular attention is given to canning pears, asparagus and ryegrass (the latter is also covered in An Economic Analysis of Ryegrass Seed, Oregon State University, Bulletin 585, September 1962).

The importance of pricing cannot be ignored. However, if all the emphasis is placed on price, other factors which contribute to the income position of producers will be ignored. Thus, prices represent only a partial index for judging the performance of cooperative bargaining associations.

Fringe benefits, such as quantity, quality and delivery terms, offer another index for judging the performance of bargaining attempts. However, just as in the case of price, fringe benefits, in themselves, offer only a partial index to performance. When combined with price, the two represent a fairly satisfactory index for judging performance. However, this is not a fixed index which applies to all commodities. What may be an important consideration in the case of one commodity may be of little importance in another.

Income, either gross or net, is another index of performance of bargaining activity. Gross income, however, is a misleading index as a large number of variables contribute to this measure of performance. It is difficult to isolate the benefits derived from bargaining from the total benefits derived from all sources. Net income decreases the factors which need to be considered, but it is still difficult to isolate the contribution of bargaining activity to net income.

In the final analysis, price is probably the best single index of performance. However, the consequences of price changes (especially upward) must be fully recognized if the bargaining association is to use price as an index of performance. A price that is considerably higher than that justified by existing economic conditions may soon lead to the downfall of the organization which brought about the higher price in the first place.

II. Analysis of Factors Affecting Performance

Perhaps a more useful way of looking at bargaining power is to question the effect of various factors on the performance of a cooperative bargaining association. These factors either "add to" or "take away" bargaining power of producers. The effect of each of these on bargaining power is as follows:

1. How many substitutes for commodity are available to consumer level? In general, a few substitutes "add to" bargaining power; many substitutes "take away" bargaining power.
2. How many other uses are there for the commodity? In general, many uses "add to" bargaining power; few uses "take away" bargaining power.
3. Is there an expanding or declining total demand for the commodity as the result of changes in consumers' incomes and/or other determinants of demand? In general, an expanding total market demand "adds to" bargaining power; a declining market demand "takes away" bargaining power.

4. How seasonal is the consumption of the commodity? In general, all-year demand "adds to" bargaining power; highly seasonal demand "takes away" bargaining power.

5. To what degree is production differentiation possible? In general, production differentiation "adds to" bargaining power; little or no production differentiation "takes away" bargaining power.

6. Is it difficult or easy to change the volume of production in the short-run? In general, difficulty of changing the volume of production "adds to" bargaining power; ease of changing the volume of production "takes away" bargaining power.

7. How perishable is the commodity in the producer's hands? In general, low perishability "adds to" bargaining power; high perishability "takes away" bargaining power.

8. Can the commodity be stored by the producer? In general, a crop that can be stored by the producer "adds to" bargaining power; a crop which cannot be stored "takes away" bargaining power.

9. What is geographic extent of the production area for the commodity? In general, a small production area "adds to" bargaining power; a large production area "takes away" bargaining power.

10. What are the potential competing areas of production for the commodity? In general, few potential competing production areas "adds to" bargaining power; many potential competing areas "takes away" bargaining power.

11. Is it easy or difficult for new producers to enter production of the commodity? In general, difficult entry "adds to" bargaining power; easy entry "takes away" bargaining power.

12. Can supply be controlled through quantity and/or quality restrictions? Ease of controlling supply by these methods "adds to" bargaining power; difficulty of controlling supply by these methods "takes away" bargaining power.

13. How concentrated are the buyers of a commodity? In general, many buyers "adds to" bargaining power; few buyers "takes away" bargaining power.

14. Are there few or many producers of a commodity? In general, few producers of a commodity "adds to" bargaining power; many producers "takes away" bargaining power.

15. Is economic-marketing information readily available and accurate? Good economic-marketing information "adds to" bargaining power; poor information "takes away" bargaining power.

16. Can the action of members be controlled by the association? In general, effective control over the action of members "adds to" bargaining power; poor control over members' actions "takes away" bargaining power.

17. What is the level of management of the association? Good management of a cooperative bargaining association "adds to" bargaining strength; poor management "takes away" bargaining strength.

18. Is there a chronic surplus of the commodity? In general, the absence of a chronic surplus situation "adds to" bargaining power; a chronic surplus situation "takes away" bargaining power.

III. Effect of Supply and Demand Elasticities on Bargaining Power

In this study, four postulated supply and demand relationships were presented. They were: (1) Inelastic supply, inelastic demand; (2) inelastic supply, elastic demand; (3) elastic supply, inelastic demand, and (4) elastic supply, elastic demand. The following is a discussion of the chances of success of bargaining activity in each of the four postulated supply and demand situations.

Inelastic supply, inelastic demand. The chances of success are good to excellent, given these supply and demand conditions. In this case, the chances of success are the best of the four supply and demand relationships postulated. The inelastic supply indicates that the organization will not be faced with an extremely serious supply response situation if the price is raised. The inelastic demand function indicates that price can be raised without a negative effect on total revenue.

Inelastic supply, elastic demand. The chances of bargaining success are fair to good, given these supply and demand conditions. As in Case I, the inelastic supply function works in favor of the producers. The elastic demand situation, however, indicates that close substitutes for the commodity are available. Pricing policy will be affected as raising the price adversely affects producer's income in two ways: (1) Total revenue is decreased; and (2) close substitutes take over part of the market held by the commodity.

Elastic supply, inelastic demand. Given these supply and demand conditions, the chances of success are fair to poor, depending on the action taken by producers to control production response. Although the inelastic demand for the commodity will, in general, increase the producers' bargaining power, this gain will be more than offset by the negative effects of the elastic supply function. However, if production response to a high price can be controlled, then the chances of success are considerably better. In fact, they may be as good as, or even better than, in Case II. The reason for this is that the producer can exert considerable influence on the supply side, whereas, he has little influence on the factors which affect the elasticity of demand.

Elastic supply, elastic demand. The chances of success in bargaining activity are poor given these supply and demand conditions. Of the four cases considered, producers have the least bargaining power in this situation unless they can influence the factors affecting the elasticity of supply and demand.

IV. Opportunities and Limitations

The question of what the bargaining association "can do" and "cannot do" has been discussed at length in previous chapters. Here is a summary of some of the opportunities and limitations.

Opportunities. Producers of certain agricultural commodities can achieve some measure of success in improving their income position through bargaining activity. Under certain economic, legal and political conditions, this improvement in income position can be brought about by more favorable price and/or other contract terms. In some cases, a cooperative bargaining association is only the first step to a potential organization which not only bargains with processors on price and other contract terms, but provides necessary services to the members as well. Finally, a cooperative bargaining association can provide the "missing link" to an efficient marketing system through the use of contracts as an "aid" to the pricing mechanism.

Limitations. Bargaining activity in agriculture is no substitute for decisions based on sound economic principles. In fact, an understanding of the underlying supply and demand conditions should be the "starting point" of organized group bargaining. Bargaining associations must "live" within the restraints placed on their activity by economic, social, political and legal conditions. Any attempt to exercise influence outside these limits will eventually result in failure. Not all commodity groups will be successful in their bargaining activities. Some will lack the economic factors favoring bargaining success. Others will lack the know-how and strategy necessary to bargain successfully.

V. Short-Run and Long-Run Conditions

The pricing policy of a cooperative bargaining association has both short-run and long-run implications. Long-run conditions cannot be sacrificed for short-run gains if the bargaining effort is to be of continuing value to the producers. Long-run success is based on year-to-year successes but a relatively high price in a given year does not mean very much. In fact, forcing price beyond economic levels in a given year may create problems in a subsequent period. When the strategy of bargaining is considered, producer groups may need to give up some short-run gains in order to achieve long-run objectives. However, from the standpoint of member interest in the bargaining association, the year-to-year benefits must be apparent to the members of the organization. It takes a well-informed membership to recognize the necessity of both short-run and long-run pricing policies.

#

Economic Possibilities and Limitations of
Cooperative Bargaining Associations*

by Sidney Hoos
University of California

What are the economic and marketing developments affecting cooperative bargaining? In order to learn more about the basic economic influence underlying cooperative bargaining, during the past several years we have been making an economic-marketing study.^{1/} The study itself is rather technical in nature, but here I will summarize in general terms some of the highlights and conclusions.

I. Economic Considerations

What is really meant by bargaining power? In our thinking, bargaining means the ability to change or to maintain a price or some other term of trade. Bargaining power is a convenient phrase to sum together all of the various economic and institutional forces which affect the price-making process. Bargaining power is used, or should be used, to represent the manipulation of market factors to create price or terms of trade more favorable than those prevailing or that would prevail otherwise.

No one single measure is sufficient to give complete evidence on the success and results of cooperative bargaining. Price is, perhaps, the most important index of performance, but by looking at price alone, one gets only an incomplete picture. For the fact may well be that a prime objective of a cooperative bargaining association is creating and taking advantage of what might be called fringe benefits. The measurement of these fringe benefits is extremely difficult. How can one measure, for example, the value of being insured that sufficient lug boxes are available at the right places and the right time? Or, how can one measure in dollars and cents the value of having equitable and uniform contracts? Yet, these types of fringe benefits certainly are important. Hence, in considering the success and the results of cooperative bargaining, one must take a multidimensional approach, certainly paying attention to price, which is the most important single element, but also recognizing the importance of other objectives of cooperative bargaining associations.

*Excerpts from a talk given by Dr. Hoos at the 6th National Conference on Fruit and Vegetable Bargaining Cooperatives, San Francisco, January 1962. For the complete text, see the Proceedings, issued by the Farmer Cooperative Service of the U. S. Department of Agriculture (pp. 13-28). In condensing, a few paragraphs have been rearranged; underlining and some subheadings have been added.

^{1/}Using newly compiled data and materials, and building on earlier work, a phase of this study has been completed recently and is presented in Peter G. Helmberger, "Cooperative Bargaining in Agriculture," University of California (Berkeley), Department of Agricultural Economics, Ph. D. dissertation, 1961. (Further publications are now in preparation-ed.)

Under certain types of market structure, the possibilities for a cooperative bargaining association to operate effectively are very small, whereas in other types of market structure the possibilities are very attractive. Thus, in considering whether there is an opportunity for cooperative bargaining in a particular region for a particular crop, one of the elements to be considered is the type of market structure prevailing in that crop in the region.

II. Economic Findings and Indications

Before sketching some economic findings and indications from our study, let me give a slight warning. It must be recognized that in a particular crop in a given area in a single season "almost anything can happen" -- and usually does. Thus, the generalizations we shall make about the findings reflect tendencies over a period of time. They need not apply to every crop in every region and year.

Also, attention must be given to the market demand situation in the crop being considered. If it happens that the market demand is expanding faster than product supply, we have a situation much different from one where the market demand is stagnant or even declining. The relative rates of expansion in supply and demand certainly affect price and other terms of trade. The effects on price that stem or flow from cooperative bargaining are superimposed upon and intermixed with effects of other economic influences operating in the market.

1. Type of Competition

Of particular importance is the type of competition among processor-buyers for the raw product. Further, we can say that the economic results of cooperative bargaining are closely related to the degree of independence in the raw product buying practices of processors. The results differ if the processors, either consciously or unconsciously, act in some sort of collusive way. This is not meant to imply that open collusion is practiced; but it is clear that the effects of cooperative bargaining depend upon whether or not there is independence in the procurement practices of buyers.

If there is independence in the procurement practices among buyers of processing fruits and vegetables, and to the extent that the buyers' behavior is more and more competitive, the potential gains to farmers from cooperative bargaining diminishes. Hence, if there is perfect competition among buyers, and this is only an ideal limit which is never attained, there would not exist any possibility of farmers gaining an economic advantage through cooperative bargaining. But when and where perfect competition does not exist among raw product buyers, there is an opportunity for gain to farmers through cooperative bargaining. The lesser the competition among processors for a given crop in a given region, the greater is the potential price enhancement available through cooperative bargaining; and conversely, the more vigorous the competition among buyers, the less potential there is for long-run price-enhancement. But potential does not necessarily mean success. There is a difference between a potential for and the achievement of success.

Whether the potential is achieved depends upon the skill and strategy in the bargaining.

A major reason why the greater the competition among buyers the less the potential for price enhancement through bargaining is the fact that cooperative bargaining itself brings no control over a raw product output. Cooperative bargaining associations generally are not in a position to practice product dumping or disposal. In those cases where a volume-control marketing order is in operation, and it is handled effectively, there is a greater potential for success on the part of the cooperative bargaining association. In a particular case where there is monopolistic competition among raw product buyers, and there is also a volume control mechanism through a marketing order or some other means, then there can be substantial potentiality for price enhancement through cooperative bargaining. Whether the potential is achieved, however, depends on the strategy and skill in bargaining.

2. Skill and Strategy

Skill and strategy in cooperative bargaining, at this stage of our knowledge, are certainly more art than science. It is not anything that one can learn necessarily by reading books or taking lessons. But, there may well be points, practices, and certain know-how ideas which can be dredged from the experience of those who have proven to be successful negotiators and bargainers; and those practices and experiences, perhaps, can be communicated to others.

3. Effect on Price

For those associations which have been active during the past 6 or so years, it is clear that most of them do not have a real lasting effect on price. It may be that in particular seasons more favorable prices are received by the associations than would have been received without bargaining. But that does not happen for every association each season; and in a good many cases for some associations it hardly ever happens.

We can also say with reasonable confidence that it is very rare that a lasting price-enhancement of as much as 10 percent emerges. A conservative estimate would be that a successful bargaining association might increase its grower price from about 2 to 10 percent; and these are figures which apply to successful cooperative bargaining associations. The unsuccessful ones have no price-impact; and there is evidence that in some cases the prices received by farmers might even have been a bit higher if the association had not been in operation. Involved are ill-advised timing, poor skill, weak strategy, and the lack of bargaining know-how.

In some circumstances, cooperative bargaining cannot be helpful to farmers; in other circumstances, it can be helpful, but is not exploited effectively; and under certain conditions there are gains to farmers from cooperative bargaining associations -- if they have the skill and the know-how in cooperative bargaining, if the market structure is favorable, and if supply response is not too sensitive so

that supply is expanded much more rapidly than demand. Generally, the results of successful cooperative bargaining associations are not as substantial as some exponents believe or declare. Yet, the results of successful cooperative bargaining, even if not as large as some people like to say, certainly can be meaningful and well worthwhile to grower members.

III. Some Limitations

Having touched upon some of the potentials and limitations of cooperative bargaining associations, I should now like to comment further on these aspects. Without going into a detailed explanation, it is clear that some of the limitations faced by cooperative bargaining associations are the very ones applying to agricultural cooperation in general.

Further, there is the point -- which is sometimes forgotten -- that the cooperative bargaining association must accept and do the best it can with the basic supply and demand situation in its particular product and region. Only a few of the cooperative bargaining associations, and these are special cases, are in a position to influence the basic supply situation, as can be done through participation in marketing orders. But even here, effect on supply is short run in nature. From the longer-run view, however, the supply situation cannot be dominated by the working of the marketing order. Hence, the basic supply and demand situations and their economic constraints apply to cooperative bargaining associations as they do to other forms of business.

Another limitation that must be recognized in cooperative bargaining concerns the particular type of crop being considered. When it is one of single-use, as only in canning, the bargaining is more manageable than if the crop has multiple use such as fresh, canned, dried, and frozen. Where the varieties, maturing dates, harvest periods, sizes, grades, and so forth, become more numerous, the bargaining problem itself becomes more complicated. The more simple these types of things are, the less the limitations; the more complicated, the greater the limitations.

Another limitation is the difficulty in the acquisition and maintenance of bargaining power. Even if an association has short-run power, it may not be able to maintain such power over a period of time. This may be due to the fact that supply might be outracing demand so that whatever marketing or bargaining power did once exist is eroded away by the basic supply-demand situation. Rather than having coercive devices, as the striking power of a union, a cooperative bargaining association must depend upon persuasive devices. But they are effective only if there is skill in bargaining and know-how in negotiation, as touched upon earlier.

From the standpoint of economics, perhaps the most serious limitation facing cooperative bargaining associations is that they have no control over volume. Here, I am excepting those several associations

which, although they do not by themselves have volume-control, do have a voice in such matters through participation in certain types of marketing order programs. But, in general, unless the association has a control over volume, it is faced with a limitation in its bargaining.

Another limitation faced by cooperative bargaining associations is that they cannot always counteract the various strategies which processors may use in attempts to weaken the cooperatives. Although one might build a case that an effectively and judiciously operated cooperative could be to the advantage of processors in various areas, it is not unusual for them not to be happy over the existence of bargaining cooperatives.

IV. Some Possibilities

In considering the economic possibilities of the cooperative bargaining associations, one must clarify their real objectives. One may well say as a simplification, of course, that these objectives are the improvement of price and other terms of trade.

The other terms of trade include many things such as a reduction of buyer discrimination among growers. This can be approached through the adoption of uniform contracts. Another objective may be increased stability in price over time, where stability is not to be confused with the level of price, or objectives may include improved grading and delivery conditions. An objective may be the furnishing of information to growers for improved practices so there will be the cost reduction in growing the crop and increased efficiency in grower-processor markets. These are fringe benefits not to be neglected as worthwhile objectives supplementing that of price enhancement. Our studies suggest that these types of fringe benefit objectives are an important area for the economic potentials and possibilities of cooperative bargaining associations. In fact, there is evidence that some associations have not been very successful in the enhancement of price itself but have made significant contributions to grower welfare through the fringe benefit approach.

The increase of uniformity in contractual arrangement with buyers, through improved and uniform contracts, is in the area where substantial progress has been achieved and further progress can be made by other associations. The dollar and cents value of this type of a possibility certainly cannot be measured but can be judged as being extremely worthwhile to growers.

Another area in which cooperative bargaining associations can increase their usefulness and exploit economic possibilities is through an improvement in their role as an agency for the study and analysis of economic facts that should be known by the membership, board of directors, and management of the cooperative bargaining association. Each crop in each area has particular types of data and information it should have, and the cooperative bargaining association is a logical vehicle to gather, sift, and disseminate relevant information. Furthermore, the association officers and management can serve as an effective mouthpiece or spokesman for the growers of the crop in general, as well as for the membership.

The association can act as a catalyst in encouraging procurement -, processing -, and marketing - efficiencies to lower the costs incurred by processors. Such cost reductions on the part of processors may, in part, pass on to the consumer and have an effect on consumption of the final product, which is certainly of interest to growers.

I think more attention should be given to the problem of cooperative bargaining by the same association for two or more products compared with a single one. It is true that there are some associations which, on paper, deal with more than one product. But in terms of the actual negotiation itself, the bargaining goes on product by product. A case may be built that if bargaining is done in terms of groups of products, there may well be benefits for both processors and growers. This is particularly so where the products involved are complementary in processing and competitive in consumption.

There certainly are economic possibilities for cooperative bargaining associations--but only if certain conditions prevail or can be brought about. It is not correct that there is no opportunity for cooperative bargaining to benefit growers. But it is also not correct that cooperative bargaining must result in gains to growers. In some cases, such associations have a valid role to play and a job to do; while in other cases, cooperative bargaining by itself can lead only to frustration and disappointment. The problem must be considered case by case, which means crop by crop in each particular region. I, myself, have little patience with the notion that cooperative bargaining is a cure-all for farmers.

Nor is it sensible to repeat the oft-stated argument that bargaining cooperatives cannot really be effective in the long-run since their short-run success leads to their long-run failures; that is, their short-run success in pricing leads to expanded production which in turn drives price down again. To the extent that such reasoning is valid, it applies to all types of business, not only cooperative bargaining. It is true that in the long run we are all dead, but that does not mean that in the meantime we should not try to do the best we can for ourselves within the economic, legal, and institutional boundaries within which we have to operate.

V. A Few Further Points

As indicated earlier, it is only in certain circumstances and under special types of market situations that cooperative bargaining does have the potential to improve the price and income position for farmers. These situations do not prevail in all farm crops. There is nothing in the cooperative bargaining mechanism by itself, and particularly in those cases where legislatively permissive volume control is not available, which suggests that cooperative bargaining is the answer to the general farm problem.

In closing, may I have your understanding for only very briefly sketching some notions about the economic possibilities and limitations

of cooperative bargaining associations, particularly those in processing fruit and vegetables. The statements I have made have been generalizations which need not hold in all cases; each of you must examine your own case. I have tried to bring to your attention that cooperative bargaining has not only potentials, but also limitations. The limitations are serious; but some, although not all, can be overcome. For some crops the possibilities exist, even if they are not as large as various commentators would like to see them or indicate in public pronouncements. Whether there are possibilities or not depends upon the existence of certain economic and institutional conditions which I have touched upon in terms of market structure and supply-demand relationships; but for the possibilities to be achieved, the bargainers must have the skill and know-how to bargain. The potential gains from cooperative bargaining, even if less than some enthusiasts believe, are meaningful and worthwhile for fruit and vegetable growers.

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Bargaining and Controlled Distribution: The Case of Apples*

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In an effort to stabilize and increase returns to apple growers, consideration has been given to bargaining associations and associated controlled distribution programs - combined programs of the sort which have been conducted with cling peaches in California. Though the two are sometimes thought of synonymously, it might be well, to start with, to look at them independently.

I. Bargaining for Price

Bargaining groups have expressed considerable interest in leveling out within-year and year-to-year price movements of apples, basing their negotiations on statistical price analysis. In this respect, two misunderstandings may arise.

First, while bargaining for an annual price may reduce the variations of price within a season, it will not automatically reduce the fluctuations in year-to-year price. If the annual price sought by the bargaining group is based on a conscientious effort to increase price above what it has been in low price years in the past and to settle for a somewhat lower price than has been received in high-price years, then the year-to-year variability may be reduced. If, however, the annual price is to be based solely on a statistical analysis of past prices, there is less reason to expect the year-to-year variations to be even out. This is because statistical models, as generally formulated, can only estimate what a future price might be based on supply and demand relationships which existed in previous years. Since the previous period showed year-to-year variability in price--which presumably led to concern over this matter--the statistical analysis will normally just incorporate these relationships in projecting a price. Consequently, bargaining based only on historical data will not automatically lead to a smoothing out of average year-to-year price. To do this, other factors must be brought into the bargaining negotiations.

Secondly, it is questionable whether grower groups really should want to even out average prices from year-to-year. This is because a program of stabilizing prices could in some cases lead to unstabilizing and reducing farm income--and growers are basically probably more interested in stabilizing and maximizing farm income.^{1/}

*Adapted from a final chapter of Mr. Dalrymple's Ph. D. dissertation, "Economic Aspects of Apple Marketing," Michigan State University, Department of Agricultural Economics, 1962, pp. 308-321, 324-330.

^{1/}This point is discussed in some detail by: Frederick L. Thomsen and Richard J. Foote, Agricultural Prices, McGraw-Hill, New York, 1952, p. 210; and Geoffrey Shepherd, Agricultural Price Analysis, Iowa State College Press, Ames, 1957, pp. 184-185.

Thus, it may be seen that price bargaining based on historical data alone does not, and possibly should not, attempt to even out year-to-year price variations. It may, however, have other important benefits--such as reducing price variation within a season. It also may prove useful in conducting diversion programs. But to show how bargaining might fit in with an apple diversion program, it is necessary to take a fairly detailed look at distribution programs.

II. Controlled Distribution

Controlled distribution as proposed for apples takes two main forms: a limitation of quantity of apples sold; and a diversion of apples from one outlet to another. Both programs should be based on specific price elasticities and costs, with the objectives of maximizing net farm values. Because so much rests on the value of the elasticity figures, it is important that one of their lesser-known but vital characteristics be understood.

1. Changes in Elasticity

For policy purposes, it is perhaps most important to recognize that elasticities of demand may change; an elasticity, once calculated, does not hold for all time. Rather, a specific elasticity exists for only the period under study. For a different period and different conditions, the elasticity may be different. This is particularly true if one bases a crop limitation or diversion program on a known elasticity for a past period--for the enactment of the policy may alter the elasticity which suggested the program in the first place.

Although the possible difference between elasticities of this nature is one that has not been well covered in economics or marketing texts, this subject has been treated at the consumer level in several journal articles.

Mighell and Allen in 1939 made one of the earliest and perhaps most detailed presentations on this point.^{2/} They stated that demand theory has been cast in terms of instantaneous or short-term schedules--even if the demand schedule was developed from extended time series data. They go on to point out that:

We have developed neither the theory or methodology for estimating what quantity of any product will presently be taken by consumers if the price has fallen to a level 10 percent lower relative to other prices and consumers have reason to believe it is there to stay. And similarly if the price has risen . . . Nothing that has been done on the subject has given us an adequate approach to the problem of consumers' response to price over more than the short run.^{3/}

^{2/}R. I. Mighell and R. H. Allen, "Demand Schedules - 'Normal and Instantaneous,'" Journal of Farm Economics, August 1939, pp. 555-569.

^{3/}Ibid., p. 555.

Mighell and Allen felt that the utility function or indifference system of the individual is partly dependent upon previously existing price relationships and may be altered in the course of time as a result of changing price relationships.^{4/}

These points lead to critical problems in relation to the limitation and diversion programs noted earlier. Mighell and Allen acknowledged that the "normal" demand curves are extremely useful for problems arising within a single year or so, but they went on to state that if continuing programs affecting the production and sale of farm products are to be planned and carried out successfully, it is necessary to reason in terms of an elasticity of demand based on a "modified" demand curve.^{5/} They indicated that the use of the normal demand curve in estimating consumers' response to price changes underestimates the extent of the response when the new prices are to be in effect for a period of several years. Specifically, it was suggested that the normal demand curves are less elastic than the modified demand curves.^{6/}

Despite the fact that Mighell and Allen's article was prominently reported, few applied studies have made explicit recognition of the differences between normal and modified elasticities. Exceptions include Kuznets and Klein, Working, and Smith. In their study of the demand for lemons in 1943, Kuznets and Klein stated:

The conclusion that revenue to growers could be increased in the long run if drastic limitation of shipments were instituted is not implied by the foregoing since the long-run effects are not treated in the formulations underlying these calculations.^{7/}

Working, in his study of the demand for meat, was more explicit. He stated that from the standpoint of national policy the most significant result of his analysis was the evidence developed to show that there is a difference between the normal and the modified elasticity of demand for meat. He found that normal demand for meat at retail to be somewhat inelastic. However, when the supply of meat was decreased and the supply maintained at that lower level over a period of years the modified demand

^{4/}Ibid., p. 562. Clearly, Mighell and Allen have a shift in the demand curve--not just a movement along it--in mind.

^{5/}Ibid., p. 565. Actually Mighell and Allen wrote in terms of short and long-run demand curves, but because this terminology may confuse those who associate the short-run with elasticities computed from data obtained within one season, as opposed to data collected over a period of years, this writer has chosed to use the more general terms, "normal" and "modified."

^{6/}Ibid., p. 569.

^{7/}G. M. Kuznets and L. R. Klein, A Statistical Analysis of the Domestic Demand for Lemons, 1921-41, University of California, Department of Agricultural Economics, Report No. 84, 1943, p. 56.

for meat at retail became elastic.^{8/} And in his recent study on lemons, Smith takes the point of view that the usual economic concept of demand is a short-time one--that is, it does not account for the possibility of a modified curve.^{9/}

While these studies recognize the differing nature of demand as controls are applied, they are less than explicit in describing methods of estimating the modified elasticity--for by its nature it remains to be influenced by proposed programs.

However, the main point is clear: statistically derived price elasticities of demand are not likely to remain the same following the institution of supply control programs. From the data presented, it appears that elasticity under controls may gradually increase. This important point has meaning for both crop limitation and diversion programs. It also applies to the question of whether to base these programs on elasticities at the farm or retail level.

2. Quantity Limitation Programs

Many individuals connected with the apple industry have considered the possibility of a program of limiting the quantity of apples marketed--similar perhaps to the green drop program of the California cling peach industry--as a way of raising farm income from apples. Such a program is based, of course, on a presumed inelastic normal demand for apples at the farm level.^{10/}

The previous discussion has suggested a number of serious theoretical problems in following such a program. First, as noted in the above section, there is the fact that we are dealing with a normal elasticity. It is an elasticity based on past relationships which have not included periods of quantity limitation. When marketing controls are incorporated over a number of years, the demand relationships may be changed and the elasticities are likely to increase. If apples were to follow the example set by meat, it is possible that inelastic demand could, over time, become an elastic demand. This could come about as consumers, faced by smaller quantities of higher-priced apples, lose their preference for apples and transfer

^{8/}Elmer J. Working, Demand for Meat, The University of Chicago Press (for the Institute of Meat Packing), Chicago, 1954, p. xi (also see pp. 13, 38, 47). Like Mighell and Allen, Working used the expressions "short-run" and "long-run." For the reasons stated in fn. 5, these have been changed to "normal" and "modified."

^{9/}Roy J. Smith, "The Lemon Prorate in the Long Run," The Journal of Political Economy, December, 1961, p. 575.

^{10/}It is possible that a limitation program might also work with an elastic demand if the industry is operating at a greater output than that which would equalize marginal revenue and marginal cost.

their demand (at this price) to other fruits.^{11/} A move in this direction seems to have taken place for lemons. Smith describes the situation in this way:

The lemon industry in its prorated program has attempted to increase growers average returns by exploiting an assumed inelasticity of demand for its fresh fruit. The effect that such a program might have on long-run production has been disregarded. In consequence the long-run results . . . would appear to have been different from those sought. Growers' returns per carton, in the long-run have not been increased. The effect on long-run market demand has also been disregarded . . . the prorated is in effect subsidizing a product which is competitive and which is driving the fresh fruit out of the market.^{12/}

A further problem is that while the short-run demand for apples at the farm level appears to be inelastic, the short-run demand at retail appears to be elastic. This is apt to place the marketing firm in an awkward position. That is, the firm that handles both wholesaling and retailing functions (as would be the case in a supermarket chain) is faced, on one hand, with an inelastic demand schedule at the farm level and, on the other hand, with an elastic demand at the retail level. Therefore, if farmers elected to limit the supply of apples, the marketing firm would have fewer apples to sell at retail. Because the normal demand at the farm is inelastic, the price that the marketing firm would pay would presumably rise. Conversely, because of the elastic demand at retail, the retail price would rise but little. This means that the marketing firm would be buying fewer apples at higher prices (total expenditures for apples would increase) and selling them at approximately the same price (decreasing total revenue). The result could only be lowered profits from apples to the marketing firm. If this happens very often, it seems reasonable to assume that the marketing firm will react by modifying its demand for apples at the farm level. The firm, in essence, will make the demand at the farm level--in years when supply is artificially limited--more elastic by paying a lower price ^{13/}than might exist in the absence of supply control. The degree to which this can or will be done will depend on the amount of oligopsony power exercised by the buyer. But since a less than perfectly competitive market appears to exist, it seems likely, especially in the canning and freezing area, that a tendency towards a lower price might be expected.^{14/} This would be comparable to a

^{11/}That is, there is a shift in the demand schedule for apples--not just a movement along it--which results in a more elastic demand.

^{12/}Smith, op. cit., p. 586. (Underlining added.)

^{13/}This is not to say that the whole demand curve is modified; we can only say that this section of the demand curve becomes more elastic--sufficiently so that if extended it would intercept the former or normal curve.

^{14/}It will be noted later in this section that the obligopsony power of buyers may be offset by oligopoly powers gained through bargaining.

more elastic demand--which does not seem unlikely in light of the preceding paragraph. That is, if consumer reaction to a control program would lead to a higher elasticity of demand at retail, it would seem that a more rapid response in the same direction at the farm level might be expected from marketing firms who buy on an inelastic market and sell on an elastic market.^{15/} The result at the farm level might eventually be lower prices for fewer apples.

In total then, it would appear that a program of supply limitation for apples may not be advisable, unless it is practiced infrequently. If practiced steadily, such a program may lead to higher elasticities of demand at the farm level--particularly since the demand at retail is elastic--which might over the long run defeat the purposes of the program.^{16/} And in the longer run, production will have probably increased due to higher prices, further aggravating the situation. In addition to these theoretical problems, there are a host of practical problems of enforcing such regulations--e.g., what total quantity is to be withheld? how is the quantity to be limited? what is to happen to the apples withheld?, etc. Because of these difficulties, a more acceptable solution might center about a program to distribute apples between fresh and processing outlets.

3. Diversion of Supply

When the price elasticity of demand in two separate markets for a product differs, it is possible to practice price discrimination. That is, higher prices may be charged in the market with the less elastic demand than in the case in the market with the elastic demand. To carry this further, the industry can maximize profits by controlling the flow of the product into each market until marginal revenues are equaled.^{17/} In this sense, the program might alternatively be labeled discriminatory diversion of supply.

In either case, the next question that arises is one of costs. How much should be produced to maximize profits, given costs? This point, as stated in economics textbooks, is reached when the marginal revenues in each market are equal to each other and to marginal cost; aggregate marginal revenue then equals marginal cost.^{18/}

^{15/}It may be that if apples represent a minor portion of the volume of a marketing firm, it will not be particularly concerned with the effects of a supply limitation program. But even though the relationships might not hold for every firm, this writer would suggest that the general movement would be as noted above.

^{16/}An exception might be provided if the purpose were to stabilize farm income. This would be accomplished if the elasticity were raised to and held at one.

^{17/}This point is covered in many textbooks, but one of the clearest presentations is made by Richard H. Leftwich in The Price System and Resource Allocation, Rinehart & Co., New York, 1958, pp. 212-213.

^{18/}This point is again clearly presented by Leftwich, op. cit., pp. 214-215.

While this formulation brings in cost, it does so in only an incomplete manner. It implicitly assumes that the costs of selling in each market are the same. In actual cases, this may not be so. The costs of selling apples to the fresh market, are quite likely to be different from those involved in selling to the processor. Unfortunately, this somewhat more realistic case has not been widely treated in the literature.

This writer suggests that the situation may be handled by equalizing marginal net revenues in the two markets. This concept calls for further explanation. Marginal net revenue is considered the equivalent of marginal revenue minus marginal cost. Therefore, the equalization of marginal net revenue involves the following relationship:

$$MR_a - MC_a = MR_b - MC_b$$

MR_a and MC_a refer to market (a) and MR_b and MC_b refer to market (b).

Given data on marginal costs and revenues, it is thus possible to determine the most profitable allocation of product between the two markets.^{19/} Yet, several serious problems remain.

The first is that data on marginal costs and revenues for both the fresh and processing markets are scarce. While they might not be too difficult to get if one were interested only in the farm level, the situation would be difficult at the retail level. There are practically no published figures available on the costs of processing and selling canned apples. Consequently, before a diversion program is adopted, it would be necessary to select the level which will be studied--farm or retail--and then gather a rather extensive amount of statistical material on costs and revenues.

A second problem centers about the question of whether farm or retail elasticities should be chosen. This is a vital issue because the relationship between fresh and processing apples at the farm level appears to be reversed at the retail level; at the farm level the elasticity of demand appears to be greater for fresh than for processing apples, while at the retail level the elasticity of demand appears to be greater for processing than for fresh.^{20/} Clearly, the policy recommendation would take quite different forms, depending upon which level elasticity is chosen. The diversion of a greater number of apples into canning would seem logical from the retail elasticities; but considering the farm elasticities, it would appear that additional apples might better go into fresh outlets.

^{19/}This is done in graphic and algebraic form in the text of the dissertation; see pp. 321-324. This material is also presented in a mimeographed leaflet "Price Discrimination With Unequal Costs," available from the author.

^{20/}This inverse relationship appears reasonable because the marketing margin for applesauce seems to be much larger and probably no more flexible than that for fresh apples.

The choice of farm or retail level elasticity may depend on frequency of diversion. If a diversion program is to be carried out only occasionally, it might be possible to base it on farm elasticities. However, if a diversion program is to be carried out frequently, a slower change in the long-run elasticities might result--for the reasons suggested in the previous section--if the program were based on the retail elasticities.^{21/} If the retail elasticity is chosen, it would mean, in years of large crops, the diversion of additional apples into canning outlets until marginal net revenues are equated at the retail level. But in doing this, a further difficulty arises. This centers about the fact that at the farm level the elasticity of demand seems to be greater for fresh market apples than for processing apples. Under such conditions, growers understandably might be reluctant to ship additional apples to the processing market. To make this outlet more attractive to growers, a bargaining program might prove of assistance.

A third problem centers about the fact that the elasticities used above, despite the reliance on the retail level, are "normal" elasticities. As a diversion program operated over a period of time, the relationships would be expected to change--possibly to the point where the diversion program was no longer worthwhile. To know what changes were taking place as the program continues, it would be necessary to compute elasticities of demand each season at the level being studied.

Despite these problems, it would seem that a program of diversion might offer greater longer-run possibilities of increasing net farm income than would a program of over-all supply limitation. However, as indicated, to carry out a diversion program a certain amount of bargaining may be advisable.

III. Bargaining and Diversion

The potential interrelationship between bargaining for price and diversion programs may be illustrated by considering the case of fresh apples and canned applesauce.

Initially, one faces differing orderings of elasticities at the retail and the farm level. The retail elasticity of demand for applesauce is greater than one and higher than for fresh apples, while the elasticity of demand at the farm level for apples for sauce is less than one and apparently lower than for fresh market apples. If in years of large crops, growers adopt a diversion program, they might decide on the basis of the retail elasticities to place more of their apples in the canning market.^{22/}

^{21/}That is, if the consumer responds to supply limitation and higher prices by increasing the elasticity of demand, it would seem fair to suggest that the marketing firm--with an inelastic demand on the farm end and an elastic demand at retail--would react in the same direction, but even more quickly.

^{22/}Within the constraints of farm organization, varietal makeup, etc.

The next problem is that at the farm level the elasticity of demand may be less for canning than for fresh apples. This means that with a large crop the canning price might drop more than the fresh price--particularly when larger than usual quantities are diverted to canning. The processor, therefore, obtains increased quantities at much lower prices than in normal years. But at the same time, the retail demand for applesauce is elastic. Therefore, the processor may be able to buy larger quantities of raw product at lower prices and sell increased quantities at prices that are not much lowered. Thus, diversion to canning in a large crop year could conceivably be profitable to the processor, but not necessarily so to the producer.

This potential profit, however, may be tempered by increased costs. While the processor is able to buy apples more cheaply, the raw product is only one of his inputs. With increased volume, lower fruit costs may be offset by increases in other costs.

The bargaining group, therefore, faces a complex task. On one hand, it might seem that for the farmer to share in the added revenue to be obtained from a diversion program in a large crop year, it would be necessary to bargain for a higher farm price for canning apples than might normally be paid. At the same time, the bargaining group should consider the possibility of higher processing costs with additional volume. But within these constraints, it might be possible for the bargaining group to obtain a higher net farm income than might be normally expected in large crop years.

At the same time, the bargaining group should recognize that in a short crop year when high farm prices might be expected, it may be necessary to settle for a somewhat lower price in order to get the processor to ascribe to the program. Bargaining and diversion cannot be considered from only the farmer or processor level. Both must be taken into account over a long-run period.

In total, if these things are done, it is possible that bargaining and diversion could result in more stable and perhaps higher returns to growers within and between seasons. But because the whole area of marketing policy for apples is complicated and ill-explored, much further study of elasticities and costs is to be recommended before any program is implemented.

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